

PUBLIC HEALTH REPORTS

VOL. 32

NOVEMBER 16, 1917

No. 46

TRINITROTOLUOL.

PRACTICAL POINTS IN ITS SAFE HANDLING.¹

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The great reduction in individual efficiency, the lost time, the ill health, and the sometimes fatal results due to chronic poisoning from the nitro and amido compounds of benzol and toluol in general, and trinitrotoluol in particular, are now so well known, and the danger of the occurrence of cases of such poisoning in the tremendously developed munitions industry is so manifest, that there can be little doubt that attempts will be made by all firms engaged in handling such poisons to safeguard their workers from chronic poisoning.

The safe handling of trinitrotoluol, however, can not be accomplished by the will to prevent poisoning alone. Poisonous compounds like trinitrotoluol can only be handled with safety to the workers concerned provided strict attention be paid to a considerable number of details, each of which is perhaps but a small component factor in the defense, the integrity of which, nevertheless, depends upon its unbroken front. This paper, therefore, is an attempt to summarize the practical means for securing effective prevention of poisoning by trinitrotoluol.

Channels of poisoning.—It is well known that trinitrotoluol, like many of the other nitro and amido coal-tar compounds, is readily absorbed through the skin. The next important avenue of absorption is the respiratory tract. Trinitrotoluol is absorbed with much more difficulty through the mucous membrane of the intestinal tract. The main channel of excretion is probably the urinary tract, although it is possible that a certain amount may also be excreted through the intestines.

Like all other poisons, there is a minimum toxic dose, which varies according to the susceptibility of the individual. As long as the amount absorbed remains beneath these limits symptoms will not be observed. While it is well-nigh impossible to prevent completely the absorption of trinitrotoluol whenever this substance is handled, nevertheless it is quite practicable, by attention to the points pres-

¹Read before the section on industrial hygiene of the American Public Health Association, Washington D. C., Oct. 18, 1917.

ently to be discussed, to keep this absorption well below the minimum toxic dose, except, perhaps, in the case of susceptible persons.

The following remarks are confined solely to the processes involved in the loading of shells with trinitrotoluol, for the reason that its manufacture is mainly confined to a few firms, whereas loading processes are likely to be carried on by any manufacturer possessing the requisite facilities, which, after all, are rather simple. For this reason the number of workers involved in loading operations is likely to be very much greater than that concerned in the manufacture of this substance. Besides this, long contact with the production of other poisonous nitrated benzol products should have given manufacturers of trinitrotoluol the requisite experience to enable them to handle the manufacture of this substance with safety to the workers concerned. In addition to this, in the manufacture of trinitrotoluol, except at the final sieving and packing operations, the substance is handled either in closed containers or in a moist condition, under which circumstances the risk of poisoning is very greatly reduced. In loading operations, on the other hand, there is constant opportunity for nearly everyone connected with such work to become the subject of chronic poisoning through either the fumes or the dust of this substance.

Precautions to be Observed.

If it is desired to reduce the risk of poisoning with trinitrotoluol to a minimum, attention must be paid to certain details under the following general headings:

1. Planning and construction of workrooms.
 - (a) Separation of processes.
 - (b) Conveyor systems.
2. Methods and processes employed.
3. Sanitary precautions on the part of the workers.
4. Hours of labor.
5. Medical supervision.

Planning and construction of workrooms.—The planning and construction of buildings used for handling trinitrotoluol can either greatly simplify or complicate the problem of its safe handling. There is no doubt that great advantage, so far as both production and safety to the health are concerned, is derived from correct location of buildings in relation to each other, the general principle being that these should permit continuous routing of the raw materials so that at no point are there any crosses in the route of the product as it proceeds from the raw to the finished state. This permits the complete segregation of one stage in the process of loading from another, and prevents the exposure of one set of workers to hazards derived from a process with which they have nothing to do.

Type of buildings.—The type of buildings in which a dangerous substance like T. N. T. is handled has also much to do with the facility with which sanitary conditions may be obtained. All such buildings should be long, narrow, and of one story. Such construction lends itself readily to the installation of the conveyor system and methods of progressive assembly; abundant natural ventilation is readily furnished because of cross currents of air through opposite openings. Moreover, monitors in roofs in conjunction with the side openings will operate more effectively than similar installations in rooms which are approximately square. Another favorable characteristic of a long and narrow construction, which aids in the maintenance of sanitary conditions, is the abundant natural illumination afforded. This not only facilitates the work, thus preventing unnecessary splashing and spills, but a well-lighted condition in a work-room reveals accumulations of dust and dirt which otherwise lurk unnoticed.

Separation of processes.—A fundamental tenet in all hazardous processes is that the only persons exposed to the particular hazard should be the group of workers involved. The long narrow construction of buildings renders the segregation of various processes easy by the use of cross partitions. With the square building, this is much more difficult to secure. Such partitions cut off needed light, the greater length makes them expensive to erect, the necessity for using all the floor area either renders their erection impracticable, or if erected, disturbs the routing of the material.

Conveyor systems.—There can be no question that a properly installed conveyor system greatly facilitates the safe handling of trinitrotoluol in loading operations, because handling the substance in the shells is reduced to a minimum. Again, as previously pointed out, such conveyor systems are much more readily installed in long narrow buildings than in square buildings.

Methods and processes involved.—There are two general ways in which the explosive is introduced into the empty shell. The powdered trinitrotoluol may either be pressed into the shell by power presses, or poured into the shell in a molten condition.

The former process is used mainly for loading large shells, which of course are used in much less quantities than small shells, in military operations. Moreover, presses are installed in heavy concrete compartments to guard against the effects of possible explosions. Very simple precautions are all that are needed to prevent any escape of dust in handling the powdered trinitrotoluol prior to pressing the charge.

In the average loading plant, however, we find that the charge is usually placed in the shell by pouring it in in a molten condition. Because of the ease with which poisoning may occur when handling

melted trinitrotoluol, the following deals especially with the methods for rendering such handling safe.

Precautions in melting trinitrotoluol.—The melting of trinitrotoluol is carried on, as a general rule, in large iron kettles heated by steam coils. Such melting kettles should be installed in a separate compartment, provided with abundant natural ventilation, through opposite openings, a monitor roof, and mechanical exhaust in the neighborhood of each kettle. Such kettles should be preferably broad and somewhat shallow in form, rather than narrow and deep. The kettles should be covered in, and provided with an exhaust pipe in which a gentle upward draft is maintained by mechanical means, so that at all times a slight negative pressure exists in the kettles. This prevents the escape of trinitrotoluol fumes into the air of the melting room. The heat should be applied to the lower portion of the kettle rather than uniformly over its area. This brings about the melting of the charge from below upward, so that the trinitrotoluol at the top is distinctly at a lower temperature than that at the bottom. In this way the amount of fumes which must be gotten rid of by the exhaust is substantially less. Attention should also be paid to the temperature maintained in the kettles, so that this is not unnecessarily high. The application of too great a degree of heat in melting not only increases the loss by evaporation of valuable material, but also increases greatly the amount of fumes which may be present in the air of the melting room.

In charging the kettles with fresh trinitrotoluol, attention should be paid to the prevention of dust. The aperture in the kettle should be provided with a lip to prevent spilling of the powder. A removable hopper fitting tightly into the aperture would also assist greatly in the prevention of unnecessary dust. The installation of permanent hoppers above each melting kettle, provided with a cut-off, also merits consideration, as a large quantity of the explosive could be placed in the hopper at one time, and then gradually added in small quantities to the melting kettle as needed. In this way the exposure to trinitrotoluol dust would be reduced to a minimum.

Casting.—After the trinitrotoluol has been melted in the kettle, it is usually drawn off in tubs, in which it cools, while being continuously agitated until near the point of solidification, whereupon it is poured into the shells. The purpose of the agitation is to secure uniform and more rapid cooling of the melted product. Very often this agitation of the melted trinitrotoluol is carried on by the use of wooden hand paddles by workers who sit continuously at these tubs, doing nothing else. Obviously this is extremely hazardous, as the trinitrotoluol is constantly above the temperature at which volatilization takes place. Where this process of hand agitation is carried on, an attempt is usually made to reduce the risk of poisoning

by the installation of exhaust hoods over the tubs. Personal observations, however, have led to the conclusion that hand agitation of melted trinitrotoluol can never be made safe; that the only permissible method is the use of mechanical agitators over hooded tubs. All workers seen engaged in the hand agitation of melted trinitrotoluol have presented a uniformly bad appearance.

Pouring in the shells.—Two methods are in general use. The first consists in arranging a large number of shells in racks on the pouring floor. The pourer takes a considerable quantity of the melted trinitrotoluol in a spouted container, and walks along the rows of shells filling each one as he comes to it. This method is inherently bad. In order to fill an adequate number of shells at one pouring, the pouring container is large, and when full, necessarily heavy. This leads to awkwardness and inaccuracy in pouring the charges, especially in the first shells, thus causing numerous splashes of the trinitrotoluol on the exterior of the shells, the floor of the casting room, the shell racks, and the person of the pourer. In plants where this method of pouring is carried out, the writer has seen thick incrustations of trinitrotoluol on all the localities mentioned, the overalls of the pourers especially being fairly caked with trinitrotoluol. Such methods not only greatly increase the risk of poisoning, but are wasteful of valuable material. Such wasteful methods, however, spring originally from poor design of buildings, as this is about the only practicable method in workrooms of square construction.

The only casting method which should be considered is the one in which the shells are placed in racks on a conveyor and passed before the pourer, who is stationed at the cooling kettle. There is no danger in this position to the pourer if the cooling kettle is adequately hooded with exhaust ventilation and provided with a mechanical agitator. It is needless to say that the charge in the cooling kettle should be conveyed by gravity from the melting kettle above, the opening in the cooling kettle being situated in its lower part, so as to avoid splashing of trinitrotoluol while the charge is running in. The proximity of the pourer to the cooling kettle permits the use of a small pouring ladle. This enables the charge to be accurately poured into the shell, because of the light weight handled.

Avoiding splashes on exterior of shell.—It is evident that all splashing of the explosive on the exterior of the shell should be avoided. Such splashing is not only wasteful of material, but increases the risk of poisoning in subsequent handling, as naturally all such deposits must subsequently be scraped off. Such splashing on the exterior of the shell may be reduced to a minimum by the use of the conveyor system and a small pouring ladle. As an additional precaution, however, the adapters, which are screwed into the shell orifice to

protect the screw threads of the shell from being clogged with melted trinitrotoluol, and also to hold the spout through which the charge is introduced into the interior of the shell, should be provided with a perforated square of tin or stiff paraffined cardboard, slipped over the spout to catch any splashes which would otherwise be deposited on the exterior of the shell. With careful work it is quite possible to pour charges into shells without any splashing of the exterior. Wherever such methods are used the personal appearance of those engaged in pouring is all the evidence that is required to convince the observer of the superiority of such methods.

Recessing the charge.—After casting, the charge is recessed for the reception of the "booster charge" of a more sensitive explosive, required for the detonation of trinitrotoluol. The end of the charge must also be surfaced. This is usually accomplished in special drill presses. In drilling out the charge, naturally considerable dust is produced from the boring. There is also danger of a possible "blowing" of the charge. For this reason the recessing of such charges should be carried on in completely inclosed compartments, provided with doors which may be automatically opened and closed, and with the provision of some holder or jig to hold the shell in the drill press. When carried on under such conditions, workers operating these drilling machines are exposed only to a minimum extent to any danger of poisoning.

The remainder of the operations concerned consists mainly in blowing out dust remaining after the boring, inspecting the shells, introducing "booster charges," capping the shell for shipment, and painting the exterior when this is required by the specifications.

After casting and recessing the charge the degree to which workers are exposed to trinitrotoluol poisoning will depend upon the care with which these processes have been carried out, such subsequent exposure being due for the most part to scraping off deposits from the exterior of the shell and cleaning out the screw threads in the nose or base of the shell, according to its type, from any trinitrotoluol which may be adherent. The quantities of the poison involved are naturally dependent upon the care which has been employed in the foregoing operations.

Additional operations which bring the workers in contact with trinitrotoluol consist in the recovery of trinitrotoluol which adheres to adapters and casting spouts, and the squares of tin or pasteboard which may have been used to catch splashes during pouring. Besides this, dust from the floor of workrooms and from borings is gathered up for recovery. Charges must also be recovered from shells which have failed to pass the inspection. Such recovery is simple and may be carried out safely by simple melting operations in appropriate melting apparatus, in which the general principles

described in the primary melting of trinitrotoluol are complied with. There is no doubt that the recovery of trinitrotoluol from sweepings, which is usually attended to by ordinary laborers, is frequently accompanied by poisoning, as such employees are usually the least intelligent in the plant and are likely to be careless. Due attention, however, to the loading methods previously described reduces such need for sweeping to a minimum. Whatever sweeping is necessary should be done by moist methods, all sweepings being deposited in fiber or tin paper-lined boxes, with close-fitting covers. The collection of dust from boring machines in tin or fiber boxes provided with a tight-fitting lid, which may be closed subsequently, will also reduce exposure to a minimum. If tin boxes are used these should be paper lined.

Sanitary precautions on the part of the workers.—A lively sense of the poisonous qualities of trinitrotoluol and the will to prevent poisoning by the requisite cooperation with the management are necessary on the part of all the workers. This means that all workers should receive instructions from the plant officials as to the methods by which trinitrotoluol poisoning may be avoided. These consist obviously in reducing personal contact to the fumes and dust of this substance to a minimum. There is no evidence that females are more susceptible than males, but the young of both sexes are likely to be highly susceptible. For this reason persons less than 21 years of age should not be employed in processes in which the worker is brought into contact with trinitrotoluol.

A complete suit of overalls, fitting closely at the neck, wrists, and ankles, gloves, and a cap covering the hair, should be worn by all the workers. Men should keep their hair short and be clean shaven. The overalls should be provided with drawstrings at the neck, wrists, and ankles. The wristband of the overalls should be pulled over the glove gauntlet, and a snug fit secured by the use of a drawstring. Overalls should be laundered weekly. There should also be provided change and locker rooms with lockers or other facilities of such nature that the street and working garments do not come in contact with each other or with those of others.

The eating of lunches in workrooms and keeping of food in workrooms should be rigidly prohibited. Compliance with this rule is best secured by providing attractive and commodious eating rooms for the use of the workers.

The workers should be especially instructed concerning the value of scrupulous bodily and oral cleanliness, as a prevention of trinitrotoluol poisoning. The hands and face should be thoroughly washed and the mouth rinsed out before eating, and a full shower bath taken at the close of the day's work. Proper facilities for this

should be furnished. The teeth should be brushed twice daily with a soft toothbrush and a good dentifrice.

One of the chief difficulties in avoiding poisoning is the reluctance on the part of workers to report to the company physician when they begin to feel sick. This is due to the relatively high wages which are paid to the workers who load ammunition and the natural desire to keep on earning these wages as long as they are able to stand up. Much of this can be done away with by a system of rotation of jobs, workers being transferred from hazardous to less hazardous employment regularly at intervals of two weeks.

Hours of labor.—Except in an emergency no person engaged in a process in which trinitrotoluol is handled should work longer than eight hours a day. By thus limiting the time of exposure, the danger of poisoning may be materially reduced. As previously stated, workers engaged in hazardous processes should be rotated to less hazardous jobs at least once in every two weeks, and oftener if necessary.

Medical supervision.—An efficient system of medical supervision under the direction of a competent physician must necessarily be provided in all plants engaged in the manufacture and handling of trinitrotoluol. The physician in charge should be familiar with the symptoms of poisoning and the precautions for preventing it. He should keep a constant check upon the efficiency of the enforcement of sanitary precautions and be given the authority to transfer or to lay off, as may be required, all workers who are showing symptoms of poisoning. He should also make frequent rounds of inspection through the workrooms, noting all workers showing the characteristic appearance of trinitrotoluol poisoning, and requiring them to report to the works dispensary for further examination. Careful records should be kept of all cases of poisoning and their subsequent treatment.

TYPHOID FEVER SPREAD BY CHRONIC CARRIERS.

A REPORT OF SEVERAL SMALL OUTBREAKS OF WHICH THREE WERE MILK BORNE.

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In order to emphasize the importance of the typhoid carrier in the distribution of the infection through the handling of food we have thought it might be of interest to add the cases which follow to the literature of this subject, and we shall first briefly describe a milk-borne epidemic in which the typhoid bacillus was isolated from the stool of a typhoid carrier on the dairy farm and also from the milk which produced the outbreak of typhoid fever.

In 1912, Stokes and Stoner¹ observed 56 cases of typhoid, during July, August, September, and October in a town of 2,500 inhabitants, and 50 cases were found on the milk route of one milkman furnishing 1,500 persons, while the four other milk men who served about 1,000 persons had only 6 cases on their dairy routes. A further investigation disclosed the fact that a woman in the dairy who had been handling the milk and dispensing it to customers had suffered from typhoid fever two years previously. An examination showed that the feces from this woman contained the typhoid bacillus. A later study of the milk for the presence of the typhoid bacillus resulted in the isolation of an organism which in all respects resembled the typhoid bacillus. The various confirmatory tests consisted of morphology and staining properties, cultural characteristics, agglutination tests with positive blood and immune typhoid serum, complement fixation tests and bactericidal tests.

During the past few years the departments of health of Baltimore and of Maryland have investigated a number of typhoid outbreaks, which studies entailed the examination of specimens from a number of people for the detection of carriers and resulted in the finding of several of these.

The first of these outbreaks consisted of a series of 22 cases which were traceable to milk. Connected with the handling of this milk was a woman who had had enteric fever about one year previously. An examination of specimens of her stool and urine demonstrated the presence of typhoid bacilli in both. No other carriers were detected among the other people employed at this dairy.

Another outbreak occurred in a college with about 600 students, of whom approximately from 200 to 300 were exposed to the source of infection, a lunch room that had in its employ a cook who was later found to be a typhoid carrier. Of these exposed to this source of infection, 11 developed enteric fever within a period of one month. After the discovery and removal of the carrier no other cases occurred.

Another outbreak was traced to a woman 75 years old, who had had typhoid fever in September, 1912. Before she entirely recovered her granddaughter, living in the same home, developed typhoid fever, and while the latter case was recovering this patient's 2-year old son developed typhoid fever and later died of this disease. In May, 1913, the older woman's son-in-law contracted typhoid fever and his daughter developed this disease in the latter part of July, 1916. A child aged 13 developed typhoid fever in November, 1916, and all of these three later cases were confirmed by the Widal reaction. In November, 1916, a boy aged 9 and a married woman who obtained their milk from the dairy of the original case developed typhoid fever.

¹ Jour. Amer. Med. Assoc., Pt. 1, Vol. LXI, Sept. 27, 1913, p. 1024.

Upon further investigation it was found that her son-in-law and his three children had been drinking milk which had been obtained from the dairy of the mother-in-law, being the original case.

In analyzing the above circumstances it would seem that the case of the granddaughter and a great-grandson of the original case might have been a house outbreak, although they very probably drank milk which was handled by the original case. The other cases would seem to be due to milk furnished by the original case, since an examination of the stools made five years after the attack of typhoid showed the presence of numerous typhoid bacilli.

In two other house outbreaks we found that there had been three cases of typhoid fever within a period of three years in one family, and upon examining the stool of the father of the household, who had had typhoid fever five years previously, we found the typhoid bacillus. In another case in which several members of the household had developed typhoid fever within a period of three years we found the typhoid bacillus in the stool of one of several sisters. Neither of these typhoid carriers cooked or handled food as far as we could learn, and it is difficult to trace out the exact method of causation of these cases.

The next investigation was that of four cases of enteric fever occurring in one family over a period of several months. This resulted in the discovery that the servant was a carrier, *B. typhosus* being isolated from his urine. In the course of the investigation specimens from the drainpipes of several refrigerators were sent to the department, and from one of these an organism which culturally resembles the typhoid bacillus was isolated. This bacillus is also agglutinated by the blood of typhoid cases and by typhoid immune serum. Further studies of this organism are being made and will be reported later by one of the authors. It is interesting to note that this organism was isolated from the material from the waste pipe of the pantry refrigerator, which could readily have become contaminated by the servant. In addition to the above-mentioned cases another was traceable to this same man. This was the servant's grandson, who lived with his grandfather.

Another familial outbreak studied consisted in all of three cases out of a family of six persons. The first was the mother of the family, followed four months after her recovery by her husband and four years later by her daughter. Feces and urine of both father and mother were examined in the course of the investigation and the stool of the latter was found to contain typhoid bacilli.

In another family four cases of enteric fever occurred over a period of four or five years. During the investigation suspicion was directed toward the cook by the following facts: She had lived with these people at the time of the first two cases, but later on left them for a

period of two or three years, during which time no case developed in this household. Almost immediately upon her return to the family in capacity of cook the other two cases developed. The examination of her urine and feces resulted in the detection of *B. typhosus* in the latter. This woman denied having had typhoid, but has had several severe attacks of biliary colic.

Conclusion.

We believe that whenever possible domestics in private service and particularly those handling food in large public establishments should not be admitted to such positions until a careful inquiry has been made into their previous medical history as to a possible former attack of typhoid fever. If there is the slightest history of any continued fever resembling typhoid fever the stools and urine should be examined for the typhoid bacillus, and if possible a second examination should be made at the expiration of a week.

These methods are not only important when applied to domestic and public cooks, waiters, and other handlers of food or food utensils, but should also be applied upon the dairy farm, in the city dairies, in bakeries and bake shops, confectionery stores, green groceries, markets, and other places where food is handled.

PREVALENCE OF DISEASE.

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring.

UNITED STATES.

CURRENT STATE SUMMARIES.

California Report for the Week Ended Nov. 10, 1917.

The California State Board of Health reported concerning the prevalence of communicable diseases in California for the week ended November 10, 1917, as follows: Two cases of anthrax in man were notified, one at Stockton and one at San Jose. A case of poliomyelitis was notified at Berkeley and one at San Mateo City. One case of leprosy and one case of smallpox were reported in San Francisco. Diphtheria, measles, scarlet fever, and whooping cough show reductions in the numbers of cases reported. Chicken pox was more prevalent than during the preceding week. There was no change in the situation as regards typhoid fever.

The details of notifiable disease cases reported during the week ended November 3, 1917, are as follows:

	Cases.		Cases.
Anthrax.....	1	Pneumonia.....	35
Chicken pox.....	65	Poliomyelitis.....	1
Diphtheria.....	78	Scarlet fever.....	79
Dysentery.....	2	Smallpox.....	8
Erysipelas.....	4	Syphilis.....	44
German measles.....	8	Tetanus.....	2
Gonococcus infection.....	67	Trachoma.....	2
Leprosy.....	1	Tuberculosis.....	106
Malaria.....	22	Typhoid fever.....	28
Measles.....	51	Whooping cough.....	66
Mumps.....	79		

Indiana Report for the Week Ended November 10, 1917.

The State Board of Health of Indiana reported concerning the prevalence of communicable diseases in Indiana for the week ended November 10, 1917, as follows: A scarlet-fever epidemic occurred at Athens, Fulton County. One case of poliomyelitis was reported at

(1930)

Wabash. Diphtheria epidemics were reported at Bethlehem, Clark County, and in Noble County. Smallpox was notified at Princeton and Portland.

Massachusetts Report for the Week Ended November 10, 1917.

Collaborating Epidemiologist Kelley reported concerning the prevalence of communicable diseases in Massachusetts for the week ended November 10, 1917, as follows: Five cases of diphtheria were notified at Templeton; 6 cases of scarlet fever at Hopkinton; 29 cases of diphtheria at Amesbury; and 1 case of actinomycosis at Westwood.

ANTHRAX.

Louisiana—Chauvin.

On November 2, 1917, a case of anthrax was reported in Chauvin, Terrebonne Parish, La.

Massachusetts Report for October, 1917.

During the month of October, 1917, 8 cases of anthrax were reported in the State of Massachusetts.

City Report for Week Ended Oct. 27, 1917.

During the week ended October 27, 1917, one fatal case of anthrax was reported at Milwaukee, Wis.

CEREBROSPINAL MENINGITIS.

Massachusetts.

During the week ended November 10, 1917, new cases of cerebrospinal meningitis were notified in Massachusetts as follows: Boston, 2; Brookline (town), 1; Wilbraham (town), 1; Fall River, 3; Springfield, 1.

State Reports for September and October, 1917.

Place.	New cases reported.	Place.	New cases reported.
Massachusetts (Oct. 1-31):		Suffolk County—	
Bristol County—		Boston.....	4
Fall River.....	1	Chelsea.....	1
Franklin County—		Worcester County—	
Holyoke.....	1	Worcester.....	1
Middlesex County—		Total.....	11
Ayer (Camp Devens).....	1	Oregon (Sept. 1-30):	
Cambridge.....	1	Clatsop County.....	1
Malden.....	1		

CEREBROSPINAL MENINGITIS—Continued.**City Reports for Week Ended Oct. 27, 1917.**

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Akron, Ohio.....	1	.....	Minneapolis, Minn.....	1	.....
Altoona, Pa.....	1	.....	New York, N. Y.....	4	3
Boston, Mass.....	2	1	Philadelphia, Pa.....	3	2
Chicago, Ill.....	5	5	Pittsburgh, Pa.....	.....	1
Dayton, Ohio.....	.....	1	Plainfield, N. J.....	1	.....
Detroit, Mich.....	2	.....	Providence, R. I.....	2	2
Fall River, Mass.....	1	.....	St. Louis, Mo.....	2	2
Hartford, Conn.....	1	2	Worcester, Mass.....	1	1
Milwaukee, Wis.....	1	2			

DIPHTHERIA.**District of Columbia.**

Cases of diphtheria have been notified in the District of Columbia as follows:

	Cases.
October 21 to 27.....	35
October 28 to November 3.....	34
November 4 to 10.....	85
November 11 to 13.....	25

See also Diphtheria, measles, scarlet fever, and tuberculosis, page 1938.

ERYSIPELAS.**City Reports for Week Ended Oct. 27, 1917.**

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Ann Arbor, Mich.....	1	.....	Los Angeles, Cal.....	2	.....
Baltimore, Md.....	1	.....	Milwaukee, Wis.....	1	.....
Birmingham, Ala.....	.....	1	Newark, N. J.....	3	1
Chicago, Ill.....	14	1	Newton, Mass.....	.....	1
Cincinnati, Ohio.....	1	.....	New York, N. Y.....	.....	1
Cleveland, Ohio.....	4	3	Omaha, Nebr.....	1	.....
Denver, Colo.....	3	.....	Philadelphia, Pa.....	2	.....
Flint, Mich.....	1	.....	Pittsburgh, Pa.....	7	2
Harrisburg, Pa.....	2	.....	St. Louis, Mo.....	10	2
Kansas City, Mo.....	1	.....	San Francisco, Cal.....	2	.....
Lancaster, Pa.....	1	.....	Schenectady, N. Y.....	.....	1

LEPROSY.**City Report for Week Ended Oct. 27, 1917.**

During the week ended October 27, 1917, one case of leprosy was reported in San Francisco, Cal.

MALARIA.**Massachusetts Report for October, 1917.**

Place.	New cases reported.	Place.	New cases reported.
Massachusetts:		Massachusetts—Continued.	
Berkshire County—		Worcester County—	
Pittsfield.....	1	Douglas (town).....	1
Essex County—		Total.....	7
Marblehead (town).....	1		
Suffolk County—			
Boston.....	3		
Chelsea.....	1		

City Reports for Week Ended Oct. 27, 1917.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Birmingham, Ala.....	5		New York, N. Y.....		2
Memphis, Tenn.....	5	2	Philadelphia, Pa.....	1	
Newark, N. J.....	1		Richmond, Va.....	1	

MEASLES.

See Diphtheria, measles, scarlet fever, and tuberculosis, page 1938.

PELLAGRA.**State Reports for October, 1917.**

Place.	New cases reported.	Place.	New cases reported.
District of Columbia.....	1	Massachusetts—Continued.	
Massachusetts:		Worcester County—	
Middlesex County—		Worcester State Hospital.....	1
Lowell.....	1	Total.....	4
Tewksbury State Infirmary.....	1		
Suffolk County—			
Boston.....	1		

City Reports for Week Ended Oct. 27, 1917.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Birmingham, Ala.....	2	1	Nashville, Tenn.....		1
Charleston, S. C.....		2	New York, N. Y.....		1
Chicago, Ill.....	1		Roanoke, Va.....	2	2
Fort Worth, Tex.....		1	Troy, N. Y.....		2
Los Angeles, Cal.....	1	1	Wilmington, N. C.....		1
Memphis, Tenn.....		1	Winston-Salem, N. C.....		1
Mobile, Ala.....		1			

PNEUMONIA.

City Reports for Week Ended Oct. 27, 1917.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Allentown, Pa.	1	.....	Kalamazoo, Mich.	1	1
Atlantic City, N. J.	1	.....	Kansas City, Mo.	2	.....
Baltimore, Md.	2	12	Lincoln, Nebr.	3	1
Binghamton, N. Y.	1	2	Lorain, Ohio	1	1
Boston, Mass.	3	18	Los Angeles, Cal.	9	5
Brockton, Mass.	1	.....	Nashville, Tenn.	1	5
Rutler, Pa.	1	.....	Newark, N. J.	31	5
Cambridge, Mass.	1	1	Newburyport, Mass.	1	1
Chelsea, Mass.	1	2	Newport, Ky.	1	1
Chicago, Ill.	120	69	Philadelphia, Pa.	53	30
Cleveland, Ohio.	32	31	Pittsburgh, Pa.	25	23
Dayton, Ohio.	5	3	Pontiac, Mich.	1	.....
Detroit, Mich.	4	29	Rochester, N. Y.	12	2
Duluth, Minn.	1	2	San Diego, Cal.	1	1
Fall River, Mass.	1	.....	San Francisco, Cal.	8	4
Fitchburg, Mass.	1	2	Schenectady, N. Y.	1	1
Flint, Mich.	4	2	Somerville, Mass.	2	3
Grand Rapids, Mich.	2	.....	Springfield, Mass.	3	3
Hagerstown, Md.	1	.....	Steelton, Pa.	1	1
Jackson, Mich.	1	2	Worcester, Mass.	1	1

POLIOMYELITIS (INFANTILE PARALYSIS).

State Reports for September and October, 1917.

Place.	New cases reported.	Place.	New cases reported.
District of Columbia (Oct. 1-31).....	2	Oregon (Sept. 1-30):	
Massachusetts (Oct. 1-31):		Marion County.....	1
Bristol County—	.....	Multnomah County—	
Fall River.....	1	Portland.....	2
Essex County—	.....	Total.....	3
Danvers (town).....	1	Washington (Sept. 1-30):	
Haverhill.....	1	Chelan County.....	1
Hampden County—	.....	Grant County.....	1
Springfield.....	2	Grays Harbor County—	
Middlesex County—	.....	Aberdeen.....	1
Lowell.....	1	King County.....	2
Stoneham (town).....	1	Issaquah.....	1
Norfolk County—	.....	Okanogan County.....	4
Wellesley (town).....	1	Whatcom County—	
Plymouth County—	.....	Bellingham.....	3
Abington (town).....	1	Whitman County.....	1
Suffolk County—	.....	Total.....	14
Chelsea.....	1		
Worcester County—	.....	
Hopedale (town).....	1		
Total.....	11		

City Reports for Week Ended Oct. 27, 1917.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Altoona, Pa.	1	.....	New York, N. Y.	1	.....
Chicago, Ill.	19	10	Philadelphia, Pa.	.....	1
East Orange, N. J.	1	.....	Pittsburgh, Pa.	1	1
Fall River, Mass.	1	.....	Richmond, Va.	1	.....
Los Angeles, Cal.	1	1	Saginaw, Mich.	1	.....
Manchester, N. H.	1	.....	Seattle, Wash.	1	.....
Milwaukee, Wis.	1	.....	Springfield, Mass.	2	1

RABIES IN MAN.**City Reports for Week Ended Oct. 27, 1917.**

During the week ended October 27, 1917, two cases of rabies in man, with two deaths, were reported in Kansas City, Mo.; one fatal case was reported in Pittsburgh, Pa.; and a fatal case in Milwaukee, Wis.

SCARLET FEVER.

See Diphtheria, measles, scarlet fever, and tuberculosis, page 1938.

SMALLPOX.**Indiana—Fort Wayne—Outbreak.**

There is a sharp outbreak of smallpox of the mild type at Fort Wayne, Ind. During the ten weeks ended November 10 there were 166 cases reported by weeks as follows: 2, 6, 5, 5, 29, 13, no report, 34, 42, 30.

Maine—Gardiner.

On November 6, 1917, an outbreak of smallpox of the mild type was reported from Gardiner, Me.

Michigan—Detroit—Outbreak.

At Detroit there have been 105 cases of smallpox of the mild type reported during the nine weeks ended November 10. These were reported by weeks as follows: 1, 8, 8, 5, 14, 14, 6, 17, 32.

Nebraska—Omaha—Outbreak.

A few weeks ago there was a distinct outbreak of the mild type of smallpox in Omaha. Then the disease seemed to be under control for a time. It has again increased in prevalence. During the nine weeks ended November 10 there were 115 cases. These were reported by weeks as follows: 2, 32, 1, 5, 3, 0, 10, 7, 55.

Washington Report for September, 1917.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Washington:			Washington—Continued.		
King County—			Yakima County.....	4	.....
Seattle.....	3	.....	Mabton.....	4	.....
Lewis County.....	2	.....	Total.....	23	.....
Pend Oreille County.....	2	.....		
Pierce County.....	1	.....		
Tacoma.....	1	.....		

SMALLPOX—Continued.

City Reports for Week Ended Oct. 27, 1917.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Akron, Ohio.....	10	.....	Leavenworth, Kans.....	1	.....
Ann Arbor, Mich.....	3	.....	Lima, Ohio.....	2	.....
Butte, Mont.....	10	.....	Milwaukee, Wis.....	3	.....
Chicago, Ill.....	3	.....	Minneapolis, Minn.....	7	.....
Cincinnati, Ohio.....	1	.....	Niagara Falls, N. Y.....	1	.....
Cleveland, Ohio.....	21	.....	Oklahoma City, Okla.....	4	.....
Dayton, Ohio.....	8	.....	Omaha, Nebr.....	10	.....
Detroit, Mich.....	6	.....	St. Louis, Mo.....	8	.....
Flint, Mich.....	4	.....	Salt Lake City, Utah.....	1	.....
Galesburg, Ill.....	1	.....	Springfield, Ill.....	1	.....
Grand Rapids, Mich.....	6	.....	Springfield, Ohio.....	1	.....
Indianapolis, Ind.....	19	.....	Terre Haute, Ind.....	4	.....
Kansas City, Kans.....	11	.....	Toledo, Ohio.....	3	.....
Kansas City, Mo.....	24	.....	Wichita, Kans.....	1	.....
La Crosse, Wis.....	10	.....		

TETANUS.

City Reports for Week Ended Oct. 27, 1917.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Cincinnati, Ohio.....	1	1	Memphis, Tenn.....	4	.....
Detroit, Mich.....	1	.....	Mobile, Ala.....	1	.....

TRACHOMA.

Arizona—Nogales.

Seven hundred and seventy-three pupils in the public schools of Nogales, Ariz., were recently examined and 20 cases of trachoma were found. Similar examinations were made in 1915 and 1916. The results are shown in the following table:

School year beginning—	Pupils examined.	Trachoma cases.	Per cent.
September, 1915.....	534	27	5.05
September, 1916.....	617	20	3.24
September, 1917.....	773	20	2.59

TUBERCULOSIS.

See Diphtheria, measles, scarlet fever, and tuberculosis, page 1938.

TYPHOID FEVER.

Mississippi—Greenwood.

An outbreak of typhoid fever has been reported at Greenwood, Miss.

TYPHOID FEVER—Continued.

State Reports for September and October, 1917.

Place.	New cases reported.	Place.	New cases reported.
District of Columbia (Oct. 1-31).....	54	Massachusetts—Continued.	
Massachusetts (Oct. 1-31):		Worcester County—Continued.	
Barnstable County—		Fitchburg.....	1
Falmouth (town).....	2	Grafton (town).....	1
Berkshire County—		Hubbardston (town).....	1
Adams (town).....	4	Uxbridge (town).....	1
Egremont (town).....	1	Webster (town).....	1
North Adams.....	2	Westborough (town).....	1
Bristol County—		West Boylston (town).....	1
Acushnet (town).....	1	Worcester.....	7
Attleboro.....	1	Total.....	246
Fall River.....	55	Oregon (Sept. 1-30):	
New Bedford.....	12	Clackamas County.....	4
Rehoboth (town).....	2	Clatsop County.....	1
Somerset (town).....	1	Douglas County.....	6
Taunton.....	1	Klamath County.....	10
Dukes County—		Multnomah County.....	1
Tisbury (town).....	1	Portland.....	15
Essex County—		Yamhill County.....	1
Andover (town).....	1	Total.....	38
Beverly.....	1	Washington (Sept. 1-30):	
Gloucester.....	3	Adams County—	
Groveland (town).....	1	Lind.....	1
Lawrence.....	3	Benton County.....	3
Lynn.....	8	Chelan County.....	5
Rowley (town).....	1	Cashmere.....	1
Franklin County—		Chelan.....	1
Buckland (town).....	1	Wenatchee.....	8
Greenfield (town).....	1	Clark County.....	1
Montague (town).....	1	Columbia County—	
Hampden County—		Dayton.....	2
Agawam (town).....	2	Cowlitz County.....	4
Ludlow (town).....	1	Douglas County.....	3
Palmer (town).....	1	Bridgeport.....	1
Springfield.....	10	Waterville.....	3
Westfield (town).....	1	Franklin County—	
Hampshire County—		Connell.....	2
Enfield (town).....	1	Grant County—	
Middlesex County—		Wilson Creek.....	1
Arlington (town).....	1	Grays Harbor County—	
Ashland (town).....	1	Aberdeen.....	8
Ayer (town).....	1	King County.....	5
Ayer (Camp Devens).....	1	Issaquah.....	1
Cambridge.....	3	Seattle.....	15
Everett.....	1	Kittitas County.....	1
Hudson (town).....	1	Lewis County.....	4
Lowell.....	4	Okanogan County.....	5
Malden.....	2	Brewster.....	1
Marlboro.....	1	Conenully.....	1
Medford.....	5	Okanogan.....	1
Melrose.....	1	Pacific County.....	2
Natick (town).....	2	Raymond.....	1
Reading (town).....	1	Pierce County—	
Somerville.....	2	Tacoma.....	3
Tewksbury State Infirmary.....	38	Skagit County.....	1
Waltham.....	1	Mount Vernon.....	1
Watertown (town).....	1	Spokane County—	
Westford (town).....	2	Spokane.....	14
Winchester (town).....	1	Stevens County.....	1
Woburn.....	3	Colville.....	3
Norfolk County—		Walla Walla County—	
Dedham (town).....	1	Waitsburg.....	2
Quincy.....	1	Walla Walla.....	13
Walpole (town).....	1	Whatcom County.....	1
Wellesley (town).....	1	Bellingham.....	1
Plymouth County—		Whitman County—	
Brockton.....	3	Edicott.....	1
Wareham (town).....	2	Yakima County.....	20
Suffolk County—		North Yakima.....	1
Boston.....	22	Total.....	143
Chelsea.....	4		
Revere.....	2		
Worcester County—			
Athol (town).....	1		
Auburn (town).....	1		

TYPHOID FEVER—Continued.
City Reports for Week Ended Oct. 27, 1917.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Akron, Ohio.....	3		Minneapolis, Minn.....	2	
Alameda, Cal.....	1		Nashville, Tenn.....	3	
Allentown, Pa.....	1		Newark, N. J.....	2	1
Alton, Ill.....	2		New Bedford, Mass.....	2	
Ann Arbor, Mich.....	3		New Britain, Conn.....	3	
Atlantic City, N. J.....	2		New Castle, Pa.....	1	
Baltimore, Md.....	17	2	New Haven, Conn.....	2	
Bellingham, Wash.....	1		New Orleans.....	6	3
Birmingham, Ala.....	18	2	New York, N. Y.....	40	8
Boston, Mass.....	7		Niagara Falls, N. Y.....	1	
Brockton, Mass.....	1		Oakland, Cal.....	2	
Butte, Mont.....	1		Oklahoma City, Okla.....	7	
Charleston, S. C.....	1		Orange, N. J.....		1
Chicago, Ill.....	16	1	Passadena, Cal.....	1	
Cincinnati, Ohio.....	1	1	Passaic, N. J.....	1	
Cleveland, Ohio.....	7	2	Pawtucket, R. I.....	4	
Coffeyville, Kans.....	1		Perth Amboy, N. J.....	1	
Columbus, Ohio.....	2		Philadelphia, Pa.....	90	4
Danville, Ill.....	5		Pittsburgh, Pa.....	7	2
Dayton, Ohio.....		1	Portland, Me.....	2	
Denver, Colo.....	6	1	Portland, Oreg.....	4	
Detroit, Mich.....	6	6	Portsmouth, N. H.....	2	
Duluth, Minn.....	3		Providence, R. I.....	2	
East Chicago, Ind.....	1		Quincy, Ill.....	1	
El Paso, Tex.....	1	1	Richmond, Va.....	3	1
Erie, Pa.....	1		Roanoke, Va.....	1	
Fall River, Mass.....	14	1	Rochester, N. Y.....		1
Fitchburg, Mass.....	1		Rutland, Vt.....	1	
Flint, Mich.....	5		Sacramento, Cal.....	1	
Fort Worth, Tex.....	3		Saginaw, Mich.....	1	
Galesburg, Ill.....	1		St. Joseph, Mo.....	5	
Galveston, Tex.....	5		St. Louis, Mo.....	9	1
Grand Rapids, Mich.....	4	2	Salt Lake City, Utah.....	39	2
Hagerstown, Md.....	1		San Diego, Cal.....	1	1
Harrisburg, Pa.....	1	1	San Francisco, Cal.....	4	1
Hartford, Conn.....	8	1	Schenectady, N. Y.....	2	
Indianapolis, Ind.....	2		Seattle, Wash.....	4	
Jackson, Mich.....	1		South Bend, Ind.....	4	2
Jersey City, N. J.....	1	1	Springfield, Ill.....	6	
Johnstown, Pa.....	1		Springfield, Mass.....	2	
Kansas City, Kans.....	6		Springfield, Ohio.....	5	
Kansas City, Mo.....	2		Superior, Wis.....		1
Knoxville, Tenn.....	2		Terre Haute, Ind.....	1	
Kokomo, Ind.....	5	1	Toledo, Ohio.....	2	
La Crosse, Wis.....	2		Trenton, N. J.....	2	
Lawrence, Mass.....	1		Troy, N. Y.....	16	1
Lexington, Ky.....	4		Washington, D. C.....	9	2
Lima, Ohio.....	1		Watertown, N. Y.....	1	
Los Angeles, Cal.....	2	1	Wheeling, W. Va.....	4	
Lowell, Mass.....	2		Wichita, Kans.....	4	1
McKeesport, Pa.....		1	Williamsport, Pa.....	1	
Meiose, Mass.....	1		Winston-Salem, N. C.....	2	1
Memphis, Tenn.....	7	1	Worcester, Mass.....	1	
Milwaukee, Wis.....	1		Zanesville, Ohio.....	1	

TYPHUS FEVER.

City Report for Week Ended Oct. 27, 1917.

During the week ended October 27, 1917, 2 cases of typhus fever were reported in New York City.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS.

State Reports for September and October, 1917.

State.	Cases reported.			State.	Cases reported.		
	Diphtheria.	Measles.	Scarlet fever.		Diphtheria.	Measles.	Scarlet fever.
District of Columbia (Oct. 1-31)....	357	34	61	Oregon (Sept. 1-30).....	16	6	25
Massachusetts (Oct. 1-31).....	1,153	589	441	Washington (Sept. 1-30).....	25	19	58

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS— Continued.

City Reports for Week Ended Oct. 27, 1917.

City.	Popula- tion as of July 1, 1916 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuber- culosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Over 500,000 inhabitants:										
Baltimore, Md.	589,621	182	22		5		10		44	28
Boston, Mass.	756,476	203	93	3	34	2	26		58	16
Chicago, Ill.	2,497,722	642	276	34	29		141	3	411	64
Cleveland, Ohio.	674,073	185	60	4	2		11	1	22	10
Detroit, Mich.	571,784	186	114	10	8		31	1	30	16
Los Angeles, Cal.	503,842		14	2	1		14		38	16
New York, N. Y.	5,602,841	1,241	248	18	96	3	78		238	133
Philadelphia, Pa.	1,709,518	456	82	7	18		22	1	99	45
Pittsburgh, Pa.	579,090	173	47	8	10		13		18	6
St. Louis, Mo.	757,309	187	58	3	8		36		29	10
From 300,000 to 500,000 inhab- itants:										
Cincinnati, Ohio.	410,476	109	20		6		3		15	12
Jersey City, N. J.	303,345	72	16	1	11	4	6		26	10
Milwaukee, Wis.	436,535	81	16	2	8		28		15	6
Minneapolis, Minn.	363,454		30		3		3			
Newark, N. J.	408,891	87	30	2	15		18		37	14
New Orleans, La.	371,747	144	23		4		4		31	25
San Francisco, Cal.	463,516	116	16	2	13		4		31	14
Seattle, Wash.	348,639	58	4		2		13		15	6
Washington, D. C.	363,980	117	35	3	4		13		21	14
From 200,000 to 300,000 inhab- itants:										
Columbus, Ohio.	214,878	62	5		2		28	1	9	6
Denver, Colo.	230,800	50	13		4		3		6	10
Indianapolis, Ind.	271,708	59			1		9			
Kansas City, Mo.	297,847	9			2		4		2	
Portland, Oreg.	205,463	41	2				7		1	5
Providence, R. I.	254,960	38	24	1	2	1	6		1	1
Rochester, N. Y.	236,417	64	11	2	10		11	1	10	4
From 100,000 to 200,000 inhab- itants:										
Birmingham, Ala.	181,762	59	9	1	13		6		12	2
Bridgeport, Conn.	121,579	28	5					1	9	3
Cambridge, Mass.	112,981	6	6		4		2		8	4
Camden, N. J.	106,233	3	3		8		2		5	5
Dayton, Ohio.	127,224	41	2				3		4	2
Fall River, Mass.	128,366	29	9	1			1		10	4
Fort Worth, Tex.	104,362	31	1		1		3			
Grand Rapids, Mich.	128,291	27	8		3		4		5	
Hartford, Conn.	110,900	40	11				3		9	3
Lawrence, Mass.	100,560	29	8						2	5
Lowell, Mass.	113,245	29	6				1		4	1
Lynn, Mass.	102,425	28	1		1		2		4	2
Memphis, Tenn.	148,995	63	17	2	5		3		17	9
Nashville, Tenn.	117,057	35	6		3		5		7	1
New Bedford, Mass.	118,158	21			4		5		5	4
New Haven, Conn.	149,685		6		5		2		6	3
Oakland, Cal.	198,604	38		1	7		7		4	2
Omaha, Nebr.	165,470	44	1		1		2		2	
Reading, Pa.	109,381	22	9	1			1			2
Richmond, Va.	156,687	47	17				8			4
Salt Lake City, Utah.	117,399	12	1		16		7			
Springfield, Mass.	105,942	38	13	1	10		12		7	4
Syracuse, N. Y.	155,624	46	20				20		3	2
Tacoma, Wash.	112,770		6				1			
Toledo, Ohio.	191,554	50	10		3		5			6
Trenton, N. J.	111,563	36	8		1				3	1
Worcester, Mass.	163,314	42	23	2	3	1	3		6	7
From 50,000 to 100,000 inhab- itants:										
Akron, Ohio.	85,625		16		2		2		2	....
Allentown, Pa.	63,505	18	5		1				3	....
Altona, Pa.	58,659		7				1			....
Atlantic City, N. J.	57,660		1						2	....
Bayonne, N. J.	69,893		2				1		2	....
Berkeley, Cal.	57,653	11			9				1	....
Binghamton, N. Y.	53,973	25	7	1	1		1	1	1	3
Brockton, Mass.	67,449		1						5	....
Canton, Ohio.	60,832	11	1				6		2	....
Charleston, S. C.	60,734	24	6						1	....

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS— Continued.

City Reports for Week Ended Oct. 27, 1917—Continued.

City.	Popula- tion as of July 1, 1916 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuber- culosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
From 50,000 to 100,000 inhabit- ants—Continued.										
Covington, Ky.	57,144	15	5				1		2	3
Duluth, Minn.	94,495	12	8		2		4		2	2
El Paso, Tex.	63,705	24	1				2			6
Erie, Pa.	75,195		8				5		4	32
Evansville, Ind.	76,078	24	1				6			2
Flint, Mich.	54,772	13	8				1			
Harrisburg, Pa.	72,015	25	7		1		4	2	3	
Hoboken, N. J.	77,214	16			10		2		4	2
Johnstown, Pa.	68,529	25		2			6			3
Kansas City, Kans.	99,437		4				3		3	
Lancaster, Pa.	50,853		6		5		1			
Malden, Mass.	51,155	11	8		2				5	2
Manchester, N. H.	78,283	20	2		5	1	3		8	2
Mobile, Ala.	58,221	22	2				1			1
New Britain, Conn.	53,794	6	8				1			
Norfolk, Va.	89,612	3	3		1				2	3
Oklahoma City, Okla.	92,943	19	2				3			2
Passaic, N. J.	71,744	18	6		1				3	2
Pawtucket, R. I.	50,411	17	3		3		2			1
Portland, Me.	63,867	15			15					
Rockford, Ill.	55,185	11	2	1						
Sacramento, Cal.	66,895	23	1		2		8	1	4	3
Saginaw, Mich.	55,642	10	1						2	
St. Joseph, Mo.	85,236	22	11				2			
San Diego, Cal.	53,339	15	1				1		1	2
Schenectady, N. Y.	99,519	23	5						6	
Sioux City, Iowa	57,078		1				2			
Somerville, Mass.	87,039	10	5				4		4	
South Bend, Ind.	68,946	11	1		1					
Springfield, Ill.	61,120	20	1							
Springfield, Ohio	51,550	21	2				1		1	2
Terra Haute, Ind.	66,083	26	8	4						
Troy, N. Y.	77,916		2						1	3
Wichita, Kans.	70,722		1				1		3	
Wilkes-Barre, Pa.	76,776	16	13				2		3	3
From 25,000 to 50,000 inhabitants:										
Alameda, Cal.	27,732	4			2		5			
Auburn, N. Y.	37,385	5	2							
Austin, Tex.	34,814	6					1			1
Brookline, Mass.	32,750	5			1		1		1	
Butler, Pa.	27,632	6	3							
Butte, Mont.	43,425	2	2				5			
Chelsea, Mass.	46,192	10	6		14		1		1	1
Chicopee, Mass.	29,319	9	1						2	1
Cumberland, Md.	26,074	9			2				3	
Danville, Ill.	32,261	17					1			
Davenport, Iowa	48,811		2				3			
Dubuque, Iowa	39,873		1	1						1
East Chicago, Ind.	28,743	7	1							
East Orange, N. J.	42,458	1			12					
Elgin, Ill.	28,203	9								1
Everett, Mass.	39,233	4	2		3		3			1
Everett, Wash.	35,486	4								1
Fitchburg, Mass.	41,781	7	5				1		1	
Galveston, Tex.	41,863	8	3						2	1
Green Bay, Wis.	29,553	10								
Hagerstown, Md.	25,679		1		1		2			
Haverhill, Mass.	48,477	12	4		2		1		5	3
Jackson, Mich.	35,363	13								1
Kalamazoo, Mich.	48,886	9	12		25				6	
Kenosha, Wis.	31,576	7	4				6			
Knoxville, Tenn.	38,676		2				14		1	
La Crosse, Wis.	31,677	6	4							
Lexington, Ky.	41,007	21	2		13				1	2
Lima, Ohio	35,384	8	1				2			
Lincoln, Nebr.	46,515	16	5		1					
Long Beach, Cal.	27,587	7	1				1			
Lorain, Ohio	36,964	4	13	2			1		1	1
Lynchburg, Va.	32,940	12	1							
Madison, Wis.	30,609						1		1	

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS— Continued.

City Reports for Week Ended Oct. 27, 1917—Continued.

City.	Population as of July 1, 1916 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
From 25,000 to 50,000 inhabitants—Continued.										
McKeesport, Pa.	47,521	5	10	1					2	
Medford, Mass.	26,234	8	2		1		2		2	3
Montclair, N. J.	26,318	2	1		1					
Nashua, N. H.	27,327	7								
Newburgh, N. Y.	29,603	5	2	1	29				2	1
New Castle, Pa.	41,133						2			
Newport, Ky.	31,927	1	1	1						
Newton, Mass.	43,715	6					1			
Niagara Falls, N. Y.	37,353	9	1	1			1		3	
Norristown, Pa.	31,401	6	1							
Ogden, Utah.	31,404	7	2		1		8			
Orange, N. J.	33,080	9			2		2			2
Pasadena, Cal.	46,450	9								
Perth Amboy, N. J.	41,185		2		1		1		4	
Pittsfield, Mass.	38,629	10					2		4	2
Portsmouth, Va.	39,651	7	3	1			3			
Quincy, Ill.	36,798	8			1				1	1
Quincy, Mass.	38,136	7	1						4	1
Pacine, Wis.	46,486	7					1			1
Ranoke, Va.	43,284	17	1				1		2	2
Rock Island, Ill.	28,926	4	2							
Steubenville, Ohio.	27,445	11	2				1			
Superior, Wis.	46,226	15								2
Taunton, Mass.	36,283	17							6	1
Waltham, Mass.	30,570	4								
Watertown, N. Y.	23,894	2					1		1	2
West Hoboken, N. J.	43,139	1	3		2		1		3	
Wheeling, W. Va.	43,377	9					1		1	1
Williamsport, Pa.	33,869		3				1			
Wilmington, N. C.	29,892	14					1			1
Winston-Salem, N. C.	31,155	20	2				8		1	1
Zanesville, Ohio.	30,863	6	1							
From 10,000 to 25,000 inhabitants:										
Alton, Ill.	22,874	8	2		2		1		2	2
Ann Arbor, Mich.	15,010	4	2				1			1
Braddock, Pa.	21,685		6		1					
Cairo, Ill.	15,791	5								2
Clinton, Mass.	13,075	4					3			
Coffeyville, Kans.	17,548		2							
Concord, N. H.	22,669	6	3		2				1	
Galesburg, Ill.	24,276	5								
Harrison, N. J.	16,950									
Kearny, N. J.	23,539	7					5		1	
Kokomo, Ind.	20,930	5	2							
Leavenworth, Kans.	19,363	4							1	
Long Branch, N. J.	15,395	1	1							
Marquette, Wis.	14,610	2					1			
Melrose, Mass.	17,445	1	2				5			
Morristown, N. J.	13,284	3								
Nanticoke, Pa.	23,126	2	1				1			
Newburyport, Mass.	15,243	2								
New London, Conn.	20,985	5	3				1			
North Adams, Mass.	22,019	8								
Northampton, Mass.	19,926	10	2		1				5	
Plainfield, N. J.	23,805	6	12	3			1			
Pontiac, Mich.	17,524	10	7						1	1
Portsmouth, N. H.	11,666						6			
Rocky Mount, N. C.	12,067	2								
Rutland, Vt.	14,831	5					4			
Sandusky, Ohio.	20,193	4								
Steelton, Pa.	15,548	6	1	1	1				1	
Wilkinsburg, Pa.	23,228	6	4	1			2			
Woburn, Mass.	15,969	5								

¹ Population Apr. 15, 1910; no estimate made.

FOREIGN.

CHINA.

Examination of Rats—Shanghai.

During the period from July 15 to September 15, 1917, 2,322 rats were examined. No plague infection was found. The last plague-infected rat at Shanghai was reported found May 6, 1917.

Plague-Infected Rat—Hongkong.

During the period from August 5 to September 15, 1917, out of 12,048 rats examined at Hongkong, 1 rat, examined during the week ended August 11, was found plague infected.

CUBA.

Communicable Diseases—Habana.

Communicable diseases have been notified at Habana as follows:

Disease.	Oct. 11-20, 1917.		Remain- ing under treat- ment. Oct. 20, 1917.	Disease.	Oct. 11-20, 1917.		Remain- ing under treat- ment Oct. 20, 1917.
	Cases.	Deaths.			Cases.	Deaths.	
Diphtheria.....	4	.....	2	Paratyphoid fever..	3	.....	4
Leprosy.....	.....	.....	10	Typhoid fever.....	26	8	94
Malaria.....	31	.....	34	Varicella.....	.....	.....	1
Measles.....	2	.....	.....		

GREAT BRITAIN.

Examination of Rats—Liverpool.

During the period from July 8 to October 6, 1917, 2,238 rats were examined at Liverpool. No plague infection was found.

RUSSIA.

Typhus Fever—Poland.

Typhus fever was reported present in Poland during the period April 23 to June 3, 1917, with 2,814 cases, and from June 17 to July 14, 1917, with 2,328 cases. Of these cases, 1,644 were notified at Warsaw from April 23 to June 3, and from June 17 to July 14, 1,495 cases.

(1942)

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER.Reports Received During the Week Ended Nov. 16, 1917.¹**CHOLERA.**

Place.	Date.	Cases.	Deaths.	Remarks.
India:				
Calcutta.....	July 8-14.....	.....	10	
Indo-China:				
Saigon.....	Sept. 10-16.....	1	1	
Java:				
East Java.....	Aug. 20-26.....	2	2	
West Java.....	.....	.....	.....	Sept. 1-13, 1917: Cases, 33;
Batavia.....	Sept. 1-13.....	24	10	deaths, 25.
Persia:				
Sabzevar.....	Aug. 20-29.....	19	14	
Philippine Islands:				
Manila.....	Aug. 5-11.....	2	.....	Not previously reported.
Provinces.....	.....	.....	.....	Aug. 5-11, 1917: Cases, 330;
Albay.....	Aug. 5-11.....	3	2	deaths, 211.
Ambos Camarines.....	do.....	6	4	
Bohol.....	do.....	33	27	
Cebu.....	do.....	40	27	
Leyte.....	do.....	148	87	
Mindanao.....	do.....	11	6	
Negros Oriental.....	do.....	58	39	
Samar.....	do.....	10	10	
Sorsogon.....	do.....	13	4	
Surigao.....	do.....	6	2	
Tayabas.....	do.....	2	3	
Provinces.....	.....	.....	.....	Aug. 12-18, 1917: Cases, 203;
Albay.....	Aug. 12-18.....	7	4	deaths, 121.
Bohol.....	do.....	22	14	
Cebu.....	do.....	8	6	
Leyte.....	do.....	83	53	
Mindanao.....	do.....	1	.....
Negros Oriental.....	do.....	65	34	
Sorsogon.....	do.....	17	10	

PLAGUE.

Bahrein Islands.....	.....	.....	.....	In Persian Gulf. Present Apr. 3, 1917.
Egypt.....	.....	.....	.....	Jan. 1-Oct. 4, 1917: Cases, 724; deaths, 395.
India.....	.....	.....	.....	July 8-14, 1917: Cases, 2,350; deaths, 1,616.
Calcutta.....	July 8-14.....	.....	3	
Indo-China:				
Saigon.....	Sept. 9-16.....	2	2	
Java:				
East Java.....	Aug. 19-26.....	1	1	
Persia:				
Mohammera.....	May 1.....	.....	.....	Present.
General:	Sept. 30.....	.....	.....	Present in interior.
Straits Settlements:				
Singapore.....	Sept. 16-22.....	2	1	

SMALLPOX.

Australia:				
New South Wales.....	Sept. 25.....	1	.....	Sept. 25, 1917: 1 case.
Warren district.....	.....	.....	.....
Brazil:				
Rio de Janeiro.....	Sept. 16-22.....	85	17	
Canada:				
Ontario—				
Windsor.....	Oct. 28-Nov. 3.....	1	.....
China:				
Amoy.....	Sept. 9-22.....	.....	.....	Present.
Chungking.....	Sept. 16-22.....	.....	.....	Do.
Shanghai.....	Sept. 25-30.....	1	.....
Cuba:				
Habana.....	Nov. 1.....	1	.....	From s. s. Alfonso XIII. From
Indo-China:				ports in Spain. For Mexican
Saigon.....	Sept. 10-16.....	24	7	ports.
Java:				
East Java.....	Aug. 19-29.....	3	.....
Mid Java.....	Aug. 13-Sept. 4.....	22	1	
West Java.....	Sept. 1-13.....	81	9	

¹ From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued.**Reports Received During the Week Ended Nov. 16, 1917—Continued.****SMALLPOX—Continued.**

Place.	Date.	Cases.	Deaths.	Remarks.
Philippine Islands:				
Manila.....	July 29-Aug. 11...	2		
Russia:				
Petrograd.....	June 24-30.....	22		
Spain:				
Malaga.....	July 1-31.....		19	
Straits Settlements:				
Singapore.....	Sept. 16-22.....	1		
On vessel:				
S. S. Alfonso XIII.....	Nov. 1.....	1		At Habana. From ports in Spain.

TYPHUS FEVER.

Austria-Hungary:				
Austria.....				Dec. 24, 1916-Feb. 24, 1917: Cases, 2,553.
Bosnia-Herzegovina.....				Dec. 22, 1916-Feb. 24, 1917: Cases, 110.
Hungary.....				Apr. 23-June 17, 1917: Cases, 406; deaths, 72.
Budapest.....	Apr. 23-May 27.....	25	4	
Eisenburg.....	Apr. 23-June 17.....	278	46	
Egypt:				
Alexandria.....	Sept. 17-30.....	12	3	
Japan:				
Nagasaki.....	Oct. 1-7.....	3	1	
Java:				
East Java.....	Aug. 23-29.....	1		
Mid-Java.....	Aug. 21-Sept. 4.....	2		
West Java.....				Sept. 1-13, 1917: Cases, 20; deaths, 1.
Batavia.....	Sept. 1-13.....	15	1	
Mexico:				
Aguascalientes.....	Oct. 22-28.....		1	
Russia:				
Petrograd.....	June 24-30.....	3		
Poland.....				Apr. 23-June 3, 1917: Cases, 2,814; deaths, 187. July 17-July 14, 1917: Cases, 2,328; deaths, 211.
Lodz.....	Apr. 23-June 3.....	129	16	
Do.....	June 17-July 14.....	108	16	
Warsaw.....	Apr. 23-June 3.....	1,644	95	
Do.....	June 17-July 14.....	1,495	131	

Reports Received from June 30 to Nov. 9, 1917.**CHOLERA.**

Place.	Date.	Cases.	Deaths.	Remarks.
India:				
Bassein.....	Apr. 1-May 5.....		8	
Bombay.....	June 24-30.....	1	1	
Do.....	July 8-Aug. 18.....	14	8	
Calcutta.....	Apr. 29-June 30.....		347	
Do.....	July 1-Aug. 18.....		20	
Madras.....	Apr. 22-June 30.....	5	4	
Do.....	July 1-Sept. 1.....	102	63	
Mandalay.....	May 6-June 30.....		2	
Do.....	July 29-Aug. 11.....		1	
Moulmein.....	May 13-June 2.....		3	
Pakokku.....	Apr. 20-May 5.....		1	
Pegu.....	May 27-June 30.....		5	
Do.....	July 1-7.....		7	
Prome.....	July 29-Aug. 11.....		1	
Rangoon.....	Apr. 21-June 30.....	31	17	
Do.....	July 8-28.....	9	7	
Indo-China:				
Provinces.....				Feb. 1-June 30, 1917: Cases, 1,273; deaths, 805. July 1-31, 1917: Cases, 522; deaths, 314.
Anam.....	Feb. 1-June 30.....	230	191	
Do.....	July 1-31.....	86	47	
Cambodia.....	Feb. 1-June 30.....	79	51	
Do.....	July 1-31.....	74	53	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued.

Reports Received from June 30 to Nov. 9, 1917—Continued.

CHOLERA—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Indo-China—Continued.				
Provinces—Continued.				
Cochin-China.....	Feb. 1-June 30....	878	543	
Do.....	July 1-31.....	359	214	
Laos.....	June 1-30.....	1	1	
Tonkin.....	Feb. 1-June 30....	36	21	
Do.....	July 1-31.....	3	3	
Saigon.....	Apr. 23-May 27....	163	108	
Do.....	July 2-Sept. 9....	45	30	
Japan				
				Jan.-July, 1917: Cases, 391. Occurring in 16 provinces and districts.
Tokyo.....	Sept. 12.....	2		Sept. 12, 1917: Cases, 232. In 5 provinces and districts.
Java:				
East Java.....	Apr. 2-8.....	1		
Do.....	July 9-15.....	1	1	
Mid Java.....	July 16-22.....	1	1	
West Java.....				Apr. 13-July 5, 1917: Cases, 71; deaths, 31. July 6-Aug. 23, 1917: Cases, 171; deaths, 96.
Batavia.....	Apr. 13-July 5....	7	2	
Do.....	July 6-Aug. 23....	14	4	
Persia:				
Mazanderan Province—				
Amir Kela.....	Feb. 3.....	1		
Barfourouche.....	Jan. 15-17.....	4		
Do.....	July 28.....	4	1	
Demavend.....	July 29.....	11	6	
Hamze Kela.....	Jan. 17.....	1		
Machidessar.....	Jan. 31.....	3		
Sari.....	July 25-Aug. 5....	179	98	
Tabriz.....				Aug. 4, 1917: In village of Ozoundeh, vicinity of Tabriz, about 7 cases daily.
Philippine Islands:				
Manila.....	June 17-23.....	1		
Do.....	Aug. 19-25.....	2		Sept. 2-8, 1917: 1 case. Not previously reported.
Provinces.				
Agusan.....	July 15-28.....	12	2	May 20-June 30, 1917: Cases, 795; deaths, 506. July 1-Aug. 4, 1917: Cases, 2,064; deaths, 1,271.
Albay.....	May 20-June 30....	113	76	Aug. 19-Sept. 15, 1917: Cases, 871; deaths, 521.
Do.....	July 1-Aug. 4.....	53	30	
Do.....	Aug. 19-Sept. 1....	10	7	
Ambos Camarines.....	June 3-9.....	2	1	
Do.....	July 22-Aug. 4....	20	11	
Bataan.....	July 8-14.....	1		
Batangas.....	June 17-23.....	1	1	
Bohol.....	May 20-June 30....	368	251	
Do.....	July 1-Aug. 4.....	263	161	
Do.....	Aug. 19-Sept. 15....	64	35	
Capiz.....	June 3-30.....	62	40	
Do.....	July 1-Aug. 4.....	64	45	
Cebu.....	June 2-30.....	231	150	
Do.....	July 1-Aug. 4.....	388	284	
Do.....	Aug. 19-Sept. 15....	65	36	
Iloilo.....	July 1-Sept. 15....	61	36	
Leyte.....	June 10-30.....	14	5	
Do.....	July 1-Aug. 4.....	334	223	
Do.....	Aug. 19-Sept. 15....	239	138	
Misamis.....	July 8-Aug. 4.....	237	117	
Mindanao.....	July 20-Aug. 4.....	12	11	
Do.....	Aug. 19-Sept. 15....	327	189	
Negros Oriental.....	July 1-Aug. 4.....	276	177	
Do.....	Aug. 19-Sept. 15....	48	39	
Rizal.....	June 21-30.....	1		
Do.....	July 1-7.....	1		
Romblon.....	July 22-28.....	1	1	
Samar.....	July 15-21.....	4	2	
Do.....	Aug. 19-Sept. 1....	92	52	
Sorsogon.....	June 3-30.....	196	88	
Do.....	July 1-Aug. 4.....	216	114	
Do.....	Aug. 19-25.....	8	5	
Surigao.....	July 29-Aug. 4.....	4	4	
Do.....	Aug. 19-25.....	6	4	
Tayabas.....	June 3-30.....	7	7	
Do.....	July 1-Aug. 4.....	11	9	
Do.....	Aug. 19-Sept. 1....	2	2	
Zamboanga.....	July 15-21.....	11	7	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued.

Reports Received from June 30 to Nov. 9, 1917—Continued.

PLAGUE.

Place.	Date.	Cases.	Deaths.	Remarks.
Arabia:				
Aden.....	May 3-July 4.....		43	Apr. 8-May 14, 1917: Cases, 69; deaths, 51.
Brazil:				
Bahia.....	June 10-30.....	12	8	
Do.....	July 8-Sept. 15.....	6	2	
Pernambuco.....	July 16-Aug. 15.....	4	1	
Ceylon:				
Colombo.....	Apr. 8-June 23.....	41	33	
Do.....	July 6-21.....	1	4	
China:				
Amoy.....	Apr. 29-May 5.....			Present and in vicinity.
Do.....	July 1-7.....	6	6	Present Aug. 10.
Hongkong.....	May 13-June 30.....	20	13	
Do.....	July 8-Aug. 18.....	4	3	
Kwangtung Pro. Ince— Ta-pu district.....	June 2.....			Present.
Ecuador:				
Estancia Vieja.....	Feb. 1-28.....	1		
Guayaquil.....	do.....	56	29	
Do.....	Mar. 1-Apr. 30.....	42	22	
Do.....	July 1-Aug. 31.....	4		
Milagro.....	Mar. 1-31.....	1		
Do.....	Apr. 1-30.....	1	1	
Nobol.....	Feb. 1-28.....	2		
Salitre.....	do.....	1		
Do.....	Mar. 1-31.....		1	
Taura.....	Feb. 1-28.....	3	2	
Egypt:				
Alexandria.....	June 21-27.....	6	4	Jan. 1-Sept. 30, 1917; Cases, 723; deaths, 393.
Do.....	July 31-Sept. 11.....	5	1	
Port Said government.....	Apr. 30-May 19.....	4	3	
Port Said.....	June 25.....	1		
Do.....	July 23-29.....	1	1	
Provinces—				
Fayoum.....	May 11-June 26.....	14	7	
Galloubeh.....	June 28.....	1		
Girgeh.....	May 17.....		1	
Minieh.....	May 12-June 28.....	4	3	
Do.....	July 29-Sept. 11.....	9		
Siout.....	May 12.....	3	1	
Suez government.....	Apr. 30-June 2.....	23	9	
Suez.....	May 12-June 28.....	38	23	
Great Britain:				
Gravesend.....	Aug. 13-24.....	3	1	From s. s. Matiana.
London.....	May 3-8.....	2		2 in hospital at port. From s. s. Sardinia from Australian and oriental ports.
India:				
Basscin.....	Apr. 1-June 30.....		54	Apr. 15-June 30, 1917: Cases, 43,992; deaths, 30,197. July 1-7, 1917: Cases, 1,870; deaths, 1,322. July 15-Aug. 18, 1917: Cases, 19,330; deaths, 14,575.
Do.....	July 1-Aug. 18.....		23	
Bombay.....	Apr. 22-June 30.....	486	397	
Do.....	July 1-Sept. 1.....	294	236	
Calcutta.....	Apr. 29-June 2.....		38	
Do.....	July 15-21.....		1	
Ilcn ada.....	Apr. 1-June 30.....		35	
Do.....	Aug. 12-18.....		2	
Karachi.....	Apr. 22-June 30.....	468	413	
Do.....	July 1-Sept. 1.....	21	16	
Madras Presidency.....	Apr. 22-June 30.....	301	250	
Do.....	July 1-Sept. 1.....	1,199	870	
Mandala.....	Apr. 8-May 12.....		9	
Do.....	July 29-Aug. 18.....		9	
Modulcin.....	Apr. 1-June 30.....		74	
Do.....	July 1-Aug. 18.....		19	
Myintyan.....	Apr. 1-7.....		1	
Pegu.....	May 27-June 2.....		2	
Do.....	July 29-Aug. 18.....		6	
Rangoon.....	Apr. 15-June 30.....	183	169	
Do.....	July 1-Aug. 11.....	303	286	
Toungoo.....	Apr. 8-14.....		2	
Do.....	July 29-Aug. 18.....		7	
Indo-China:				
Provinces				
Anam.....	Feb. 1-June 30.....	232	131	Feb. 1-June 30, 1917: Cases, 730; deaths, 491. July 1-31, 1917: Cases, 69; deaths, 45.
Do.....	July 1-31.....	13	9	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued.**Reports Received from June 30 to Nov. 9, 1917—Continued.****PLAGUE—Continued.**

Place.	Date.	Cases.	Deaths.	Remarks.
Indo-China—Continued.				
Provinces—Continued.				
Cambodia.....	Feb. 1-June 30....	132	113	
Do.....	July 1-31.....	10	10	
Cochin-China.....	Feb. 1-June 30....	219	133	
Do.....	July 1-31.....	43	24	
Kwang-Chow-Wan.....	May 1-June 30....	34	23	
Tonkin.....	Feb. 1-June 30....	113	89	
Do.....	July 1-31.....	3	2	
Saigon.....	Apr. 23-June 3....	47	26	
Japan:				
Aichi Ken.....	Jan.-July.....	22		
Miye Ken.....	do.....	3		
Java:				
East Java.....				Apr. 2-May 20, 1917: Cases, 29; deaths, 29. July 30-Aug. 5, 1917: Cases, 3; deaths, 3.
Djocjakarta Residency.....	Apr. 23-May 6....	1	1	
Kediri Residency.....	do.....	1	1	
Samarang Residency.....	Apr. 23-May 20....	3	3	
Surabaya Residency.....	Apr. 2-May 20....	18	18	
Do.....	July 8-28.....	4	4	
Surakarta Residency.....	do.....	6	6	
Peru:				
Departments—				May 13-31, 1917: Cases, 15. June 1-July 31, 1917: Cases, 38.
Ancachs.....	July 1-31.....	3		At Casma.
Arequipa.....	May 16-July 31....	10		At Mollendo.
Callao.....	do.....	5		At Callao.
Lambayeque.....	do.....	3		At Chiclayo.
Libertad.....	May 16-21.....	7		At Salaverry, San Pedro, and Trujillo. July 1-31, 1917: At Trujillo.
Lima.....	do.....	20		At Lima. July 1-31, 1917: Lima, city and country.
Slam:				
Bangkok.....	Apr. 22-June 30....	13	12	
Do.....	July 3-Sept. 1....	17	15	
Straits Settlements:				
Singapore.....	June 3-16.....	2	1	
Do.....	July 1-Sept. 6....	9	7	
Union of South Africa:				
Cape of Good Hope State—				Present.
Craddock.....	Aug. 23.....			Do.
Glengrey district.....	Aug. 13.....			At Summerhill Farm.
Terka district.....	May 28.....	1	1	
Queenstown.....	June 6.....	1		
Orange Free State:				
Winburg district.....	May 28.....		1	Apr. 16-22, 1917: 1 case. Apr. 9-22, 1917: Cases, 26; deaths, 17.
At sea:				
S. S. Matiana.....	July 14-18.....	9	6	En route for port of London.

SMALLPOX.

Australia:				
New South Wales:				
Brewarrina.....	Apr. 27-June 21....	6		Apr. 27-Aug. 30, 1917: Cases, 77.
Cessnock.....	July 25-28.....	4		
Coonabarabran.....	May 25-July 5....	13		
Quambone.....	Apr. 27-June 21....	2		
Warren district.....	June 22-Aug. 30....	52		
Queensland:				
Thursday Island Quarantine Station.....	May 9.....	1		From s. s. St. Albans from Kobe via Hongkong. Vessel proceeded to Townsville, Brisbane, and Sydney, in quarantine.
Brazil:				
Bahia.....	May 6-June 30....	4		
Do.....	July 22-Sept. 22....	5	1	
Rio de Janeiro.....	do.....	126	31	
Do.....	July 1-Sept. 15....	433	91	
Canada:				
Manitoba—				
Winnipeg.....	June 10-16.....	1		
Do.....	Aug. 19-Sept. 1....	5		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued.

Reports Received from June 30 to Nov. 9, 1917—Continued.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Canada—Continued.				
Nova Scotia—				
Halifax.....	June 18-July 7....	3		Present in district.
Port Hawkesbury.....	June 17-30.....			
Ontario—				
Ottawa.....	July 30-Aug. 5.....	1		
Windsor.....	Sept. 30-Oct. 20....	3		
Ceylon:				
Colombo.....	May 6-12.....	1		
China:				
Amoy.....	Apr. 29-May 26....			Present and in vicinity.
Do.....	July 1-Aug. 19.....			Do.
Antung.....	May 21-June 24....	4		
Do.....	Aug. 6-12.....	1		
Changsha.....	May 27-June 2.....	5		
Do.....	Aug. 11-17.....		7	
Chungking.....	May 6-June 23.....			Do.
Do.....	July 1-Sept. 15.....			Do.
Dairen.....	July 13-June 30....	30	4	
Do.....	July 8-28.....	6	1	July 1-7, 1917; Present.
Hankow.....	June 21-30.....	2		
Harbin.....	Apr. 23-May 6.....	7		On Chinese Eastern Ry.
Hongkong.....	May 6-June 16.....	8	7	
Do.....	Aug. 5-18.....	1		
Manchuria Station.....	Apr. 23-29.....	1		Do.
Mukden.....	May 27-June 2.....			Present.
Do.....	July 8-Sept. 30....			Do.
Shanghai.....	May 21-July 1.....	13	32	Cases foreign; deaths among natives.
Do.....	July 2-Sept. 29....		9	Among Chinese.
Tsitsihar Station.....	Apr. 16-22.....	1		On Chinese Eastern Ry.
Tsingtao.....	May 22-July 7.....	35	7	At another station on railway
Do.....	July 30-Aug. 11....	4	1	1 case.
Chosen (Korea):				
Chemulpo.....	May 1-31.....	1		
Ecuador:				
Guayaquil.....	Feb. 1-28.....	1		
Do.....	Mar. 1-Apr. 30.....	8		
Do.....	July 1-Aug. 31.....	12		
Egypt:				
Alexandria.....	Apr. 30-July 1.....	39	9	
Do.....	July 2-29.....	30	4	
Cairo.....	Feb. 12-Apr. 8.....	80	1	
France:				
Nantes.....	July 30-Aug. 5.....	1		
Paris.....	May 6-12.....	1		
Germany:				Mar. 18-Apr. 28, 1917: Cases, 715; in cities and 32 States and districts.
Berlin.....	Mar. 18-Apr. 28....	106		
Bremen.....	do.....	16		
Charlottenberg.....	do.....	18		
Hamburg.....	do.....	50		
Leipzig.....	do.....	20		
Lübeck.....	do.....	2		
Munich.....	do.....	10		
Stuttgart.....	do.....	1		
Greece:				
Athens.....	July 25-30.....		23	
India:				
Bombay.....	Apr. 22-June 30....	186	75	
Do.....	July 1-Sept. 1.....	55	25	
Calcutta.....	Apr. 29-May 26....		12	
Karachi.....	Apr. 22-July 4.....	27	8	
Do.....	July 8-Sept. 1.....	5	2	
Madras.....	Apr. 22-June 30....	80	48	
Do.....	July 1-Sept. 1.....	11	20	
Rangoon.....	Apr. 15-June 30....	33	5	
Do.....	July 1-28.....	7		
Indo-China:				
Provinces.....				Feb. 1-June 30, 1917: Cases, 617; deaths, 535. July 1-31, 1917: Cases, 525; deaths, 132.
Anam.....	Feb. 1-June 30....	1,630	237	
Do.....	July 1-31.....	353	59	
Cambodia.....	Feb. 1-June 30....	136	26	
Do.....	July 1-31.....	28	23	
Cochin-China.....	Feb. 1-June 30....	1,267	377	
Do.....	July 1-31.....	130	49	
Kwang-Chow-Wan.....	Mar. 1-Apr. 30....	4		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued.

Reports Received from June 30 to Nov. 9, 1917—Continued.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Indo-China—Continued.				
Provinces—Continued.				
Laos.....	Apr. 1-30.....	5	1	
Do.....	July 1-31.....	10	1	
Tonkin.....	Feb. 1-June 30.....	274	30	
Do.....	July 1-31.....	4	—	
Saigon.....	Apr. 27-June 10.....	199	63	
Do.....	July 2-Sept. 9.....	33	19	
Italy:				
Turin.....	May 21-June 24.....	32	12	
Do.....	July 12-Sept. 30.....	12	3	
Jamaica:				
Kingston.....	Sept. 9-15.....	1	—	
Japan:				
Kobe.....	May 27-July 22.....	65	16	
Nagasaki.....	May 28-June 3.....	1	—	
Osaka.....	May 16-July 5.....	177	55	
Yokkaichi.....	July 25-31.....	1	—	
Yokohama.....	May 27-July 1.....	1	1	
Java:				
East Java.....	Apr. 2-July 1.....	38	2	
Do.....	July 2-29.....	18	—	
Mid-Java.....	Apr. 1-July 1.....	88	7	
Do.....	July 2-22.....	23	—	
West Java.....	—	—	—	
Batavia.....	Apr. 13-July 5.....	30	6	
Mexico:				
Coatepec.....	Jan. 1-June 30.....	—	116	
Do.....	Aug. 1-14.....	—	1	
Jalapa.....	July 1-13.....	—	1	
Mazatlan.....	July 11-Aug. 7.....	—	9	
Mexico City.....	June 3-30.....	162	—	
Do.....	Aug. 5-Sept. 22.....	142	—	
Monterey.....	June 18-24.....	—	24	
Orizaba.....	Jan. 1-June 30.....	—	23	
Do.....	July 1-23.....	—	1	
Vera Cruz.....	July 1-Sept. 15.....	6	2	
Netherlands:				
Amsterdam.....	Aug. 13-18.....	1	1	
Philippine Islands:				
Manila.....	May 13-June 9.....	6	—	
Do.....	July 8-Sept. 1.....	5	—	
Portugal:				
Lisbon.....	May 13-June 30.....	14	—	
Do.....	July 8-Aug. 18.....	8	—	
Portuguese East Africa:				
Lourenço Marques.....	Mar. 1-June 30.....	—	5	
Russia:				
Archangel.....	May 1-June 28.....	56	4	
Do.....	July 2-Aug. 28.....	6	—	
Moscow.....	July 2-15.....	6	—	
Petrograd.....	Feb. 18-June 23.....	543	—	
Do.....	July 2-29.....	58	—	
Riga.....	Mar. 11-June 2.....	7	—	
Vladivostok.....	Mar. 15-24.....	23	7	
Slam:				
Bangkok.....	June 9-30.....	16	—	
Do.....	July 11-17.....	3	5	
Spain:				
Madrid.....	May 1-June 19.....	—	4	
Malaga.....	Apr. 1-June 30.....	—	44	
Seville.....	May 1-June 30.....	—	11	
Valencia.....	June 3-23.....	5	—	
Do.....	July 1-Sept. 15.....	13	—	
Straits Settlements:				
Penang.....	Mar. 18-June 23.....	6	3	
Singapore.....	June 24-30.....	1	—	
Sweden:				
Malmo.....	Apr. 22-28.....	1	—	
Stockholm.....	May 20-June 23.....	2	1	
Tunisia:				
Tunis.....	June 2-8.....	2	—	
Turkey in Asia:				
Trebizond.....	Feb. 25-Apr. 13.....	—	15	

Jan.-July, 1917: Cases, 4,974; in 37 Provinces and districts.

Apr. 13-July 5, 1917: Cases, 239; deaths, 44. July 6-Aug. 2, 1917: Cases, 68; deaths, 14.

Jan. 1-Aug. 14, 1916: 118 deaths.

Varioloid.
Do.

Jan. 1-Mar. 31, 1917: Cases, 9.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued.

Reports Received from June 30 to Nov. 9, 1917—Continued.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Union of South Africa:				
Johannesburg.....	Mar. 12-24.....	4		
Do.....	July 1-31.....	3		
Uruguay:				
Montevideo.....	May 1-31.....	2		
Venezuela:				
Maracaibo.....	June 18-July 8.....		8	
Do.....	July 9-23.....		1	

TYPHUS FEVER.

Algeria:				
Algiers.....	June 1-30.....	6	3	
Do.....	July 1-Aug. 31.....	1	1	
Argentina:				
Buenos Aires.....	Aug. 12-18.....		1	
Austria-Hungary:				
Austria.....				Oct. 22-Dec. 17, 1916: Cases, 2,371.
Bohemia.....	Oct. 22-Dec. 17.....	634		
Galicia.....	do.....	809		
Lower Austria.....	do.....	47		
Moravia.....	do.....	617		
Silesia.....	do.....	16		
Styria.....	do.....	243		
Upper Austria.....	do.....	5		
Hungary.....				Feb. 19-Mar. 25, 1917: Cases, 1,381.
Budapest.....	Feb. 19-Mar. 25.....	83		
Brazil:				
Rio de Janeiro.....	July 29-Aug. 11.....	2		
Canary Islands:				
Santa Cruz de Tenerife.....	Sept. 23-29.....		1	
China:				
Antung.....	June 23-July 1.....	3		
Do.....	July 9-Sept. 23.....	15	1	
Hankow.....	June 9-15.....	1		
Do.....	July 8-14.....		1	
Tientsin.....	June 17-23.....	1		
Tsingtao.....	May 30-July 7.....	4		
Do.....	Aug. 5-11.....	1		
Egypt:				
Alexandria.....	Aug. 30-July 1.....	1,648	478	
Do.....	July 17-Sept. 16.....	418	115	
Cairo.....	Jan. 22-Apr. 8.....	188	76	
Port Said.....	Mar. 19-25.....	1		
Great Britain:				
Cork.....	June 17-23.....		1	
Glasgow.....	Sept. 30-Oct. 6.....	1		
Greece:				
Saloniki.....	May 23-June 30.....		32	
Do.....	July 1-Aug. 4.....		19	
Japan:				
Hakodate.....	July 22-28.....	1		
Nagasaki.....	June 11-24.....	4		
Do.....	July 9-Sept. 30.....	34	6	
Java:				
East Java.....				May 6-July 1, 1917: Cases, 6.
Surabaya.....	June 25-July 29.....	4		July 9-29, 1917: Cases, 6.
Mid-Java.....				Apr. 1-June 24, 1917: Cases, 38;
Samarang.....	May 5-June 10.....	14	2	deaths, 5. July 9-Aug. 23, 1917:
Do.....	July 2-8.....	5		Cases, 13; deaths, 1.
West Java.....				Apr. 13-July 5, 1917: Cases, 147;
Batavia.....	Apr. 13-July 5.....	70	6	deaths, 6. July 6-Aug. 23, 1917:
Do.....	July 6-Aug. 23.....	61	8	Cases, 82; deaths, 11.
Mexico:				
Aguascalientes.....	July 10-16.....		1	
Coatepec.....	Aug. 1-14.....		1	
Jalapa.....	Apr. 1-June 30.....		5	
Do.....	July 1-31.....		3	
Mexico City.....	June 3-30.....	431		
Do.....	July 8-Sept. 22.....	1,044		
Orizaba.....	Jan. 1-June 30.....		6	
Do.....	July 1-31.....		1	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued.

Reports Received from June 30 to Nov. 9, 1917—Continued.

TYPHUS FEVER—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Netherlands:				
Rotterdam.....	June 9-23.....	3	2	
Do.....	July 15-Sept. 1....	11		
Norway:				
Bergen.....	July 8-28.....	7		
Portuguese East Africa:				
Lourenço Marques.....	Mar. 1-31.....	1		
Russia:				
Archangel.....	May 1-June 28....	11	2	
Do.....	July 2-Aug. 28....	16	5	
Moscow.....	July 2-15.....	10		
Petrograd.....	Feb. 18-June 23...	138	3	
Do.....	July 2-29.....	33		
Riga.....	May 31-June 16....	8		Jan. 1-31, 1917: 1 case.
Do.....	July 22-28.....	5		May 1-31, 1917: Cases, 4.
Vladivostok.....	Mar. 29-May 21....	5		
Spain:				
Almeria.....	May 1-31.....		5	
Madrid.....	do.....		2	
Switzerland:				
Basel.....	June 17-27.....	1		
Do.....	July 8-Sept. 22....	7	1	
Zurich.....	July 26-Sept. 22....	2		
Trinidad.....	June 4-9.....	2		
Tunisia:				
Tunis.....	June 30-July 6....		1	
Union of South Africa:				
Cape of Good Hope State.....				Aug. 25, 1917: Present in 16 districts.
East London.....	Sept. 10.....			Present.

YELLOW FEVER.

Ecuador:				
Babahoyo.....	Feb. 1-28.....	1	1	
Do.....	Mar. 1-31.....	2	1	
Chobo.....	do.....	1	1	
Guayaquil.....	Feb. 1-28.....	18	7	
Do.....	Mar. 1-Apr. 30....	34	18	
Do.....	July 1-Aug. 31....	24	10	
Milagro.....	Feb. 1-28.....	1		
Do.....	Mar. 1-Apr. 30....	2	1	
Naranjito.....	July 1-Aug. 31....	2	2	
Mexico:				
Campeche State—				
Campeche.....	Aug. 19-25.....	2	1	
Yucatan State—				
Merida.....	Aug. 8-Sept. 20....	8	3	
Peto.....	June 23.....	1		In person recently arrived from Mexico City.
Do.....	July 1-Sept. 25....	6	1	
Venezuela:				
Coro.....				Present Sept. 5.